



# Material Safety Data Sheet

## TEMAc-4 2-(Perfluorobutyl) Ethyl Methacrylate

Revised 03- November-2009

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### Material Identification

**Product name:** TEMA-4  
**Chemical name:** 2-(Perfluorobutyl) ethyl methacrylate  
1*H*, 1*H*, 2*H*, 2*H*-Nonafluorohexyl-1-methacrylate  
**Chemical formula:** CH<sub>2</sub>=C(CH<sub>3</sub>)C(O)OCH<sub>2</sub>CH<sub>2</sub>(CF<sub>2</sub>CF<sub>2</sub>)<sub>2</sub>F  
C<sub>10</sub>H<sub>9</sub>F<sub>9</sub>O<sub>2</sub>

#### Company Identification

**Distributor** Top Fluorochem Co., Ltd.  
Building C2, 3<sup>rd</sup> Floor  
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XinZhuang Industrial Park  
Minhang District  
Shanghai, P. R. China 201108

**Manufacturer** Fuxin Hengtong Fluorine Chemicals Co., Ltd.  
Fuxin Chemicals Community  
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### 2. COMPOSITION AND INFORMATION ON INGREDIENTS

#### Components

Material	CAS #	EINECS #	TSCA Listed	Weight %
2-(Perfluorobutyl) ethyl methacrylate	1799-84-4	217-287-5	Yes	
2,6-Di- <i>tert</i> -butyl-4-methylphenol	128-37-0	204-881-4	Yes	30 ppm

### 3. HEALTH HAZARD INFORMATION

**Irritant:** Irritating to skin, eyes, and respiratory system.  
May have harmful effects if inhaled or swallowed.  
Avoid prolonged exposure. Do not breathe vapor.  
Use caution when handling. Exposure to any chemical should be limited. To the best of our knowledge, the health hazards of this material have not been fully investigated.

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#### 4. FIRST AID MEASURES

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<b>Inhalation:</b>	Remove victim from source of exposure to fresh air. If breathing is difficult administer oxygen. Seek medical attention.
<b>Skin Contact:</b>	After contact with skin, wash with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. COLD water may be used. Cover the irritated skin with an emollient. Seek medical attention. Wash any contaminated clothing before reusing.
<b>Eye Contact:</b>	Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes while keeping eyes open. COLD water may be used. Seek medical attention.
<b>Ingestion:</b>	Do not induce vomiting. Give water to victim to drink. Seek medical attention.

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#### 5. FIRE FIGHTING MEASURES

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##### Flammable Properties

<b>Flash point:</b>	79 °C
<b>Method:</b>	Closed cup

**Extinguishing Media:** Carbon dioxide, dry chemical powder, alcohol or polymer foam.

**Special Fire-Fighting Procedures:** Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

**Unusual Fire and Explosion Hazards/Decomposition of Product:** Emits toxic fumes under fire conditions.

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#### 6. ACCIDENTAL RELEASE MEASURES

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**Steps to be Taken if Material Is Released or Spilled:** Wear appropriate respirator, rubber boots, and heavy rubber gloves. Scoop up and place in an appropriate container. Ventilate area and wash spill site after pickup is complete. Wash skin immediately with plenty of water. Absorb on sand or vermiculite and place in closed containers for disposal.

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#### 7. HANDLING AND STORAGE

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**Irritant:** Combustible liquid.  
 Avoid all direct contact with material.  
 Wash thoroughly after handling.  
 Do not breathe dust or vapor.  
 Have safety shower and eye wash available.  
 Do not get in eyes, on skin, on clothing.  
 Ensure adequate ventilation during use.

<b>Storage Conditions:</b>	Use only in a chemical fume hood. Keep container and store in a cool, well-ventilated area. Keep container tightly closed. Avoid sources of ignition.
<b>Suitable Packaging:</b>	Must only be kept in original packaging.

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## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

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<b>Engineering Controls:</b>	Keep container tightly closed. Use only with adequate ventilation. Vent heated extruder or dryer fumes outside work area. Do not aerosolize. In spray applications, use airless type pressure spray equipment at less than 60 psi, and exhaust ducts, drip pans, or other design features to minimize worker exposure to mists and overspray.
<b>Personal Protective Equipment</b>	
<b>Eye/face protection:</b>	Wear safety glasses. Ensure eye bath is at hand.
<b>Respirators:</b>	Self-contained breathing apparatus must be available in case of emergency.
<b>Protective clothing:</b>	Where there is potential for skin contact have available and wear as appropriate impervious gloves, apron, pants, and jacket.
<b>Hand protection:</b>	Protective gloves.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Boiling Point</b>	70 °C @ 9 mm Hg
<b>Melting Point</b>	- 53 °C
<b>Molecular Weight</b>	332.16 g/mol
<b>Density</b>	1.402 g/mL @ 20 °C
<b>Solubility in Water</b>	0 weight %
<b>pH</b>	3 to 5 @ 20 °C
<b>Odor</b>	Acrylic
<b>Form</b>	Liquid
<b>Color</b>	Colorless
<b>Refractive Index</b>	N(D) = 1.3469 @ 25 °C
<b>Flash Point</b>	79 °C (closed cup)

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## 10. STABILITY AND REACTIVITY

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<b>Stability:</b>	Stable under normal conditions.
<b>Conditions to Avoid:</b>	Heat.
<b>Materials to Avoid:</b>	Strong oxidizing agents. Strong acids.
<b>Hazardous Decomposition Products:</b>	In combustion, emits toxic fumes including carbon monoxide, carbon dioxide, and hydrogen fluoride.
<b>Hazardous Polymerization Reactions:</b>	Unless inhibited, product can polymerize, raising temperature and pressure, possibly rupturing container. Check inhibitor content often adding to

melted bulk liquid if needed.

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## 11. TOXICOLOGICAL INFORMATION

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### ACUTE EFFECTS:

Irritant

Irritating to skin, eyes, and respiratory system. Material is irritating to mucous membranes and upper respiratory tract. To the best of our knowledge, the toxicological properties of this product have not been fully determined.

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## 12. ECOLOGICAL INFORMATION

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No data available.

### General:

Take care to prevent chemicals from entering the ground, water courses or drainage systems.

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## 13. DISPOSAL CONSIDERATIONS

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### Disposal Considerations:

Dissolve in or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all Federal, State and local laws.

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## 14. TRANSPORTATION INFORMATION

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Mode	DOT/IMDG/IATA
UN Number	None. Non-hazardous for transport.
Class (Subsidiary)	None. Non-hazardous for transport.
Proper Shipping Name	None. Non-hazardous for transport.
Hazard Label (Subsidiary)	None. Non-hazardous for transport.
Packing Group	None. Non-hazardous for transport.
Shipping Hazard Label	None. Non-hazardous for transport.

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## 15. OTHER INFORMATION

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### Legal Disclaimer:

For R&D use only. Not for drug, household, or other uses. The previous information is based upon our current knowledge and experience of our product and is not exhaustive. It applies to the product as defined by the specifications. In case of combinations or mixtures, one must confirm that no new hazards are likely to exist. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and integrity of the work environment. Unless noted to the contrary, the technical information applies only to pure product.

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